Abstract

A method of determining a set of variables to receive value changes as part of a local search solution to an integer programming problem. The method can be used where a constraint has one or more polynomial terms of at least second order. In an embodiment of the present invention an unsatisfied constraint is selected. Stores are created for allowable changes of value for the variables in the unsatisfied constraint. The unsatisfied constraint is parsed through by term. For each variable in a term, the stores are updated with a change in the term for each of the allowable changes of the value while maintaining other variables constant. A variable to receive the value change, and possibly a value for the variable, are chosen based upon the store which meets at least one improvement criterion.